Webinar:
Outlook of CO2 logistics in Finland for CCUS

Webinar Programme

Setting the scene: Industrial Carbon Management and the role of infrastructure

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Outlook of CO2 logistics in Finland for CCUS – report presentation & key findings

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Q&A, discussion & closing remarks

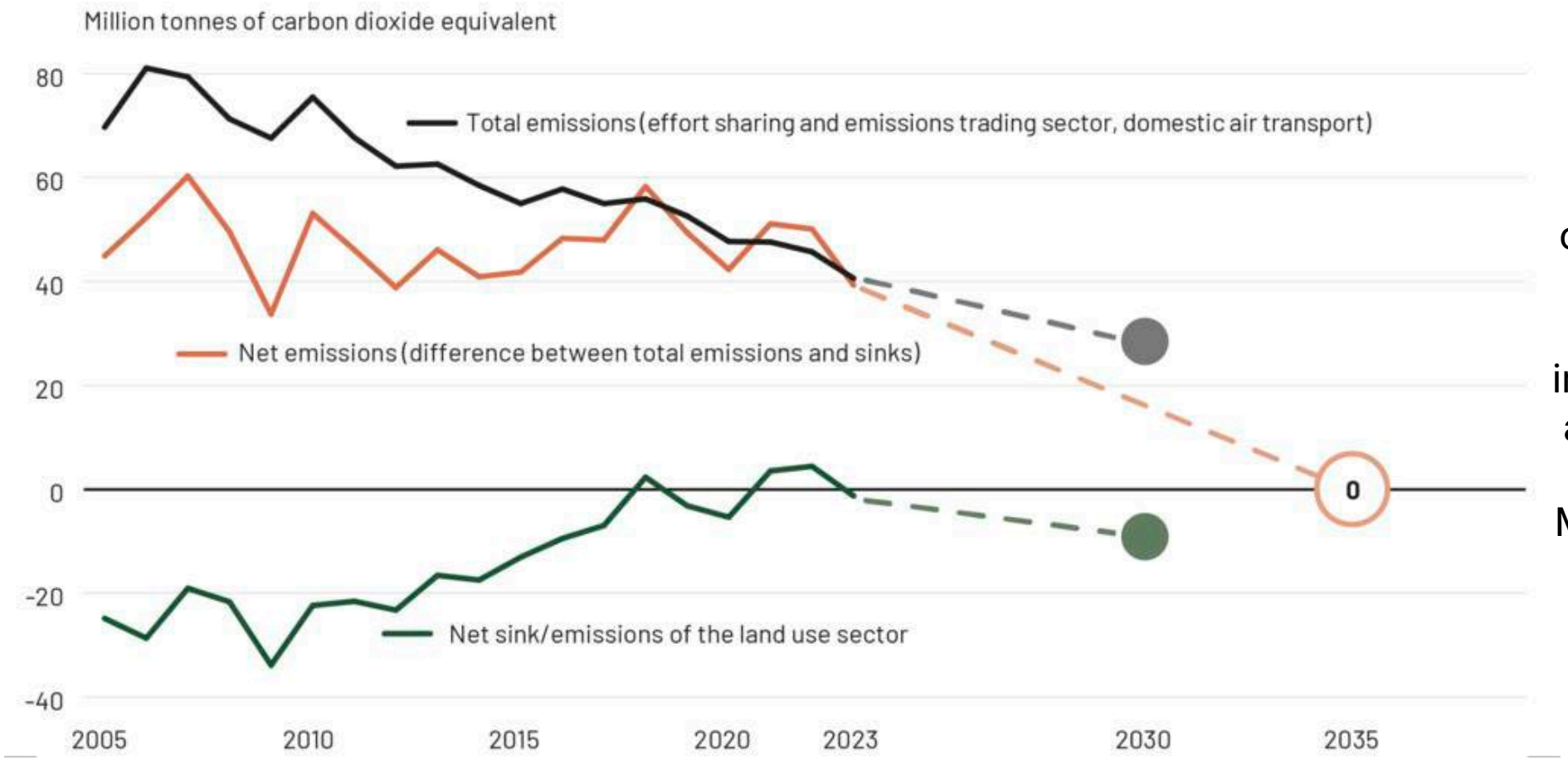
Bioenergy Association of Finland

- Business association with 250 member organisations.
- We represents the entire bioenergy sector from land ownership to energy companies, as well as technology and research in the field.
- Our goal: To position Finland as the global leader in creating sustainable, bio-based, and even carbon-negative solutions.
    - Carbon removal & CCUS -committee & biochar network
- Learn more!

Industrial Carbon Management & the role of infrastructure

Erika Laajalahti
Bioenergy Association of Finland
4.10.2024

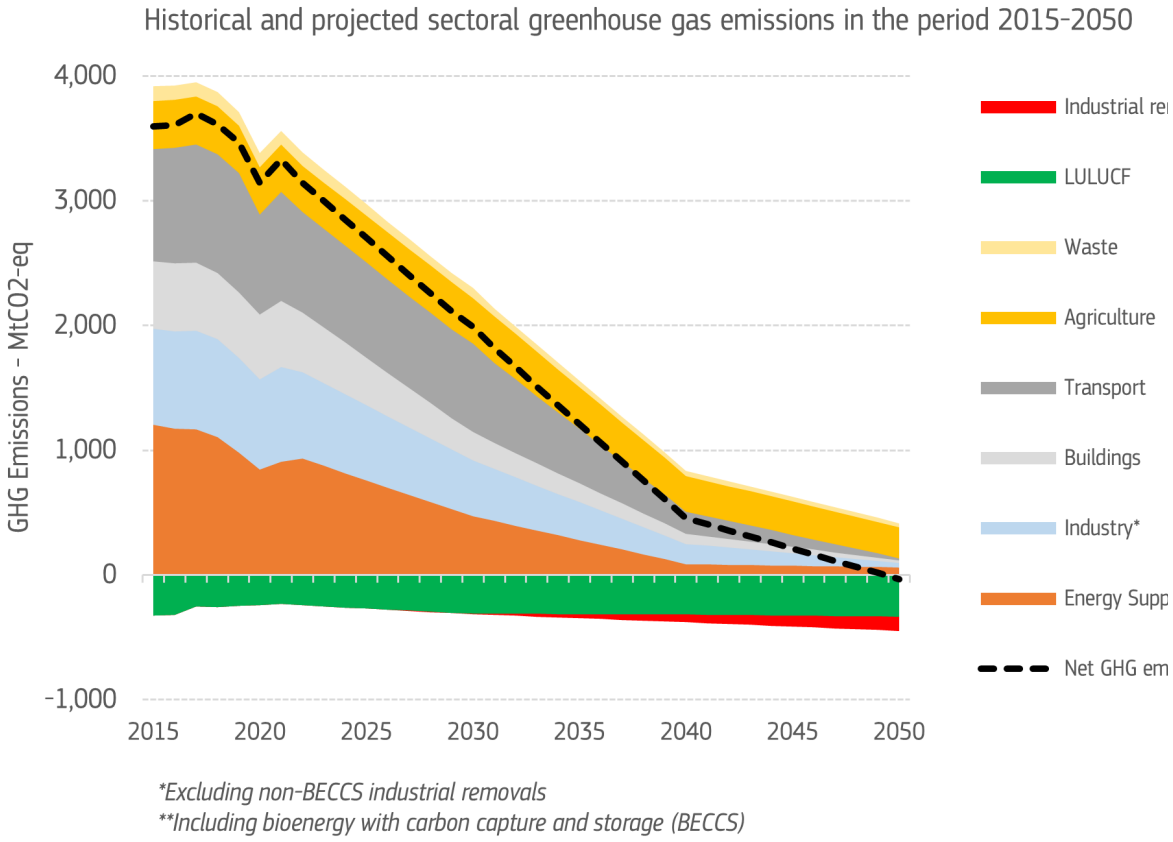
Finland's path to carbon neutrality in 2035



"Our greatest opportunity in terms of scale is to capture carbon dioxide from industrial smokestacks, and we are developing incentives for this", Minister of Climate and the Environment **Kai Mykkänen**.

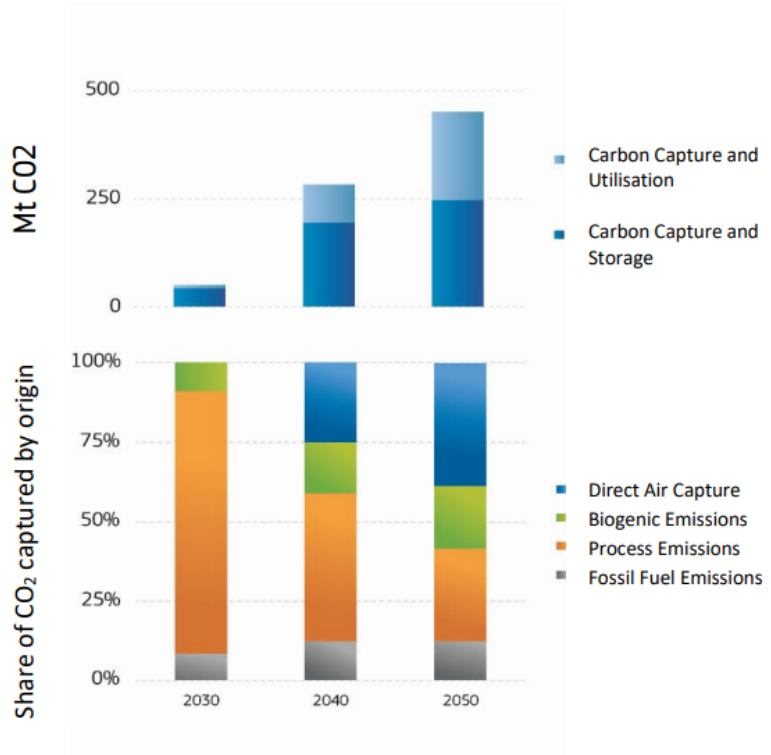
Source: Finnish Annual Climate Report 2024

All EU 2040 scenarios require a significant scale-up of CCUS solutions



*Excluding non-BECCS industrial removals
**Including bioenergy with carbon capture and storage (BECCS)

Figure 1: Volume of CO_2 captured for storage and utilisation in the EU (above chart) and share of the CO_2 captured by origin (below chart)[13]



CO2 infrastructure and ensuring storage capacity are top priorities.

2040 Communication 2/2024

ICM Communication 2/2024

CO2 transport infrastructure is the key enabler for all CCUS pathways

- The use of the captured CO2 directly on-site is not always possible, and CO2 needs to be transported for either use in industrial processes (e.g. for construction products, synthetic fuels, plastics or other chemicals) or for permanent storage. → CO2 transport infrastructure needed, alongside local use/storage, to support the scale up of the pathways in cost efficient manner and create a unified CO2 market in Europe.
- CO2 transport is already commercial but current volumes are generally very small compared to future industrial carbon management needs.
- The EU already has several policies supporting CCUS and the associated infrastructure needs (e.g. CCS Directive, TENE Regulation, EU ETS). However, cross-border, open-access, multimodal CO2 transport network is currently unregulated at the EU level.

Commission's key actions for CO2 transport & infrastructure

- Developing a proposal for a future **CO2 transport regulatory package**
  - Addressing e.g.: market structure, cross-border integration, investment incentives, technical harmonization, third-party access, and tariff regulation.
- Collaboration with Member States and the ICM Forum on an **EU-wide CO2 transport infrastructure planning mechanism**
  - Repurposing existing infrastructure for CO2 transport, considering renewable gas needs.
  - Stakeholder input vital for network planning, similar to electricity/gas sectors.
- Possibly **nominating European coordinators** to support cross-border infrastructure development.
- Develop **emissions accounting rules under the EU ETS** for all CO2 transport modes
- **Establishing minimum standards for CO2 streams** to be used in a network code (to be done with the European standardisation bodies).
- Promote **safe CO2 transport by sea & necessary guidelines** through the International Maritime Organization.

CO2 transport & infrastructure development

- CO2 infrastructure hubs are being established with initial commercial agreements for CO2 capture and storage/use.
- Great progress seen recently. CO2 infrastructure and transport at larger scale are technically feasible. Important proof for all pathways.
- EU-wide CO2 transport infrastructure guidelines needed to support investments, ensuring interoperability and minimum CO2 quality standards across the continent.

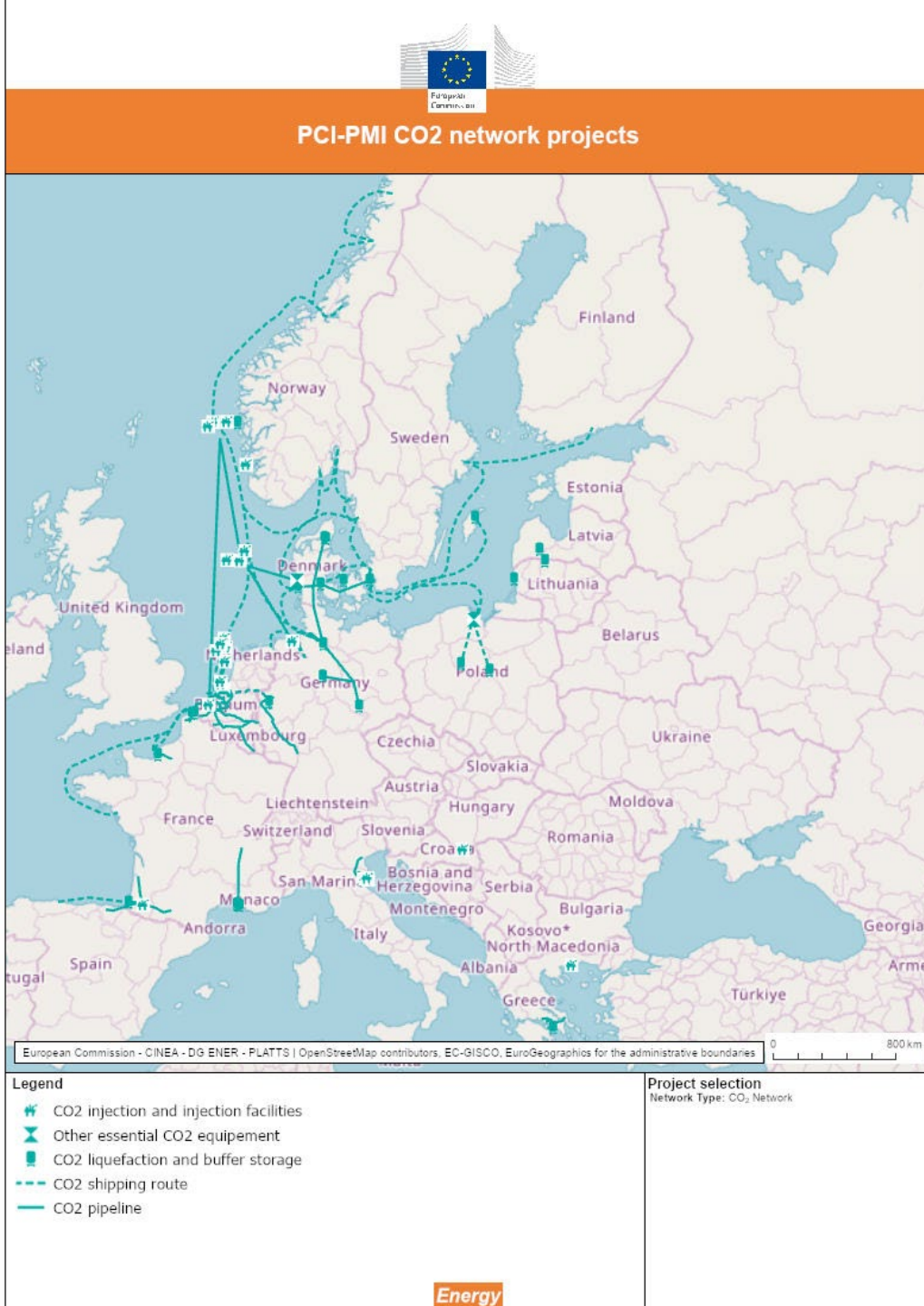
Source: Northern Light project opening ceremony in Øygarden, September 26th, 2024. Completed CO2 receiving facilities.

CO2 transport networks

- The Commission's Joint Research Centre (JRC) published (2/2024) a study on the future CO2 transport network for Europe and related investment needs. Update in the making (e.g. including identification and clustering of CO2 ports/terminals/hubs).
- CO2 transport network is a key enabler for the wider implementation of CCUS technologies and to minimise total investment costs. Cooperation & coordination of infrastructure development needed at EU level.
- CO2 transport network less likely to be developed on a project-by-project basis but rather multiple projects sharing the transport network. Most of the network infrastructure will be comprised of large transport networks connecting several countries.

Projects of Common Interest / Mutual Interest

- The current list of 14 projects of common interest (PCIs) or projects of mutual interest (PMIs).
- Overall planned capacity up to 103 Mt per year of CO2 through four onshore storage sites and eight or more offshore locations.
- Project locations from the Baltic Sea to the Mediterranean.



Thank you!

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